Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-22. (Canceled)

23. (Currently amended) A method of separating heavy particles from light particles ~~separation~~, comprising ~~a primary separation stage, the primary separation stage comprising~~:

dropping [[of]] particles onto a transversely operated belt that is moved in a direction transverse to the direction of movement of particulate material;

accumulating a first group of particles having substantially medium to low density;

concentrating a second group of particles having substantially medium to high density, concentrating comprising:

providing ~~a variable~~ variably adjustable concave profile in the belt, the concave profile being progressively adjustable from a first position wherein the belt is in a fully lowered cross-sectional configuration to a second position wherein the belt is in a fully raised cross-sectional configuration and to positions intermediate between the first position and the second position; and

subjecting the first and second groups of particles to separation in the concave area, each in an opposite direction; and

discharging each of the groups at an opposite end of the belt ~~at exit points located at 180° relative to each other~~.

24. (Currently amended) The method of claim 23, further comprising ~~a secondary separation stage for concentrating the particles, the secondary separation stage comprising~~:

infeeding the concentrated second group of particles to a stilling plate;

stilling the particles on the stilling plate; and

feeding the particles into a retaining zone and retaining the particles.

25. (Previously presented) The method of claim 23, further comprising using a spiral formation provided on the belt to provide effective heavy particle separation.

26. (Previously presented) The method of claim 25, wherein the spiral formation provides effective heavy particle separation in one or more of the following ways:

moving particles transversely to the belt movement;

fluidising the particles so that light particles are scoured off from its upper layer and heavy particles are drawn back toward the upper end of the belt;

providing increased retention time for material on the belt resulting in repetitive and more accurate evaluation of the relative densities of the particles.

27. (Canceled)

28. (Currently amended) The method of claim [[27]] 23, ~~wherein the preliminary separation stage comprises~~ further comprising:

adding water to the feed material;

scrubbing;

classifying by size; and

transporting ~~to the primary separation stage~~ the particles for dropping.

29. (Currently amended) The method of claim 27, wherein transporting ~~the preliminary separation stage~~ comprises [[a]] differential transportation designed to separate heavy, medium and light particles before dropping ~~introduction to the primary separation stage~~.

30. (Currently amended) The method of claim 23, further comprising transporting particles comprising heavy particles between the dropping, accumulating, and concentrating ~~in the primary separation stage~~.

31. (Previously presented) The method of claim 23, wherein discharging comprises discharging heavy particles from an accumulation zone; and

the method further comprises collecting or feeding the discharged particles to a secondary separation stage.

32. (Previously presented) The method of claim 23, further comprising collecting or feeding particles from a discharge zone to a secondary separation stage.

33. (Previously presented) The method of claim 23, further comprising separating particles discharged from a discharge zone into a leading section, a central section, and a trailing section;

and collecting or feeding the separated particles to a secondary separation stage.

34. (Currently amended) The method of claim 24, further comprising transporting particles comprising heavy particles between infeeding, stilling, and retaining ~~in the secondary separation stage~~.

35. (Currently amended) A heavy particle separation apparatus, comprising

a tiltable transverse belt, the tiltable transverse belt:

being configured to be moved in a direction transverse to the direction of movement of particulate material;

being concavely shaped in its central area and having a plurality of idler rollers adjustable in a vertical direction to provide a variable concave profile in the belt; the concave profile being progressively adjustable from a first position wherein the belt is in a fully lowered cross-sectional configuration to a second position wherein the belt is in a fully raised cross-sectional configuration and to positions intermediate between the first position and the second position; and

comprising a continuous spiral formation having an effective pitch provided on the belt outer surface; the spiral formation being configured to urge material upwardly along the belt;

a material feeder ~~means~~ disposed above the belt;

a water spray system disposed above the belt; and

exit points for particulate material ~~located at positions 180° relative to each other~~.

36. (Canceled)

37. (Currently amended) The apparatus of claim 35, further comprising a classification system to provide the material feeder ~~means~~ with material smaller than about 2.5cm.

38. (Currently amended) The apparatus of claim 35, wherein the material feeder ~~means~~ comprises a feed conveyor belt, sloping chute, or feed conveyor belt and sloping chute so that it provides an even differential feed of material to the transversely operated transverse belt.

39. (Currently amended) The apparatus of claim 38, the material feeder ~~means~~ being provided above the transversely operated transverse belt and near one side thereof.

40. (Currently amended) The apparatus of claim 39, wherein the water spray system is provided above and near an opposite side of the transversely operated transverse belt with respect to the material feeder ~~means~~.

41. (Previously presented) The apparatus of claim 35, in which the spiral formation is a rib or a groove having an effective pitch; the belt surface has an effective texture; or the spiral formation is a rib or a groove having an effective pitch and the belt surface has an effective texture.

42. (Previously presented) The apparatus of claim 41, wherein the rib or groove has a suitably varying pitch along its length.

43. (Previously presented) The apparatus of claim 41, wherein the rib or groove has a suitably varying height or depth, respectively, along its length.

44. (Previously presented) The apparatus of claim 35, further comprising:
a tailings trough at the lower end of the transversely operated transverse belt; and
a concentrate trough at the upper end of the transversely operated transverse belt.

45. (Currently amended) The apparatus of claim 44, wherein the concentrate trough leads to a ~~secondary separation means comprising a~~ sluice box to separate fine heavy material.

46. (Previously presented) The apparatus of claim 35, further comprising retaining or retention modules mounted on a conveyer ~~means~~ and being removable in continuous fashion for collection of heavy particles.

47. (Canceled)

48. (Currently amended) The method of claim 23, wherein the variable concave profile of the belt is progressively adjustable from a first position, wherein the belt is cross-sectionally symmetrical, to an intermediate ~~second~~ position, wherein the belt is cross-sectionally asymmetrical.

49. (Currently amended) The apparatus of claim 35, wherein the variable concave profile of the belt is progressively adjustable from a first position, wherein the belt is cross-sectionally symmetrical, to an intermediate ~~second~~ position, wherein the belt is cross-sectionally asymmetrical.

50. (New) The method of claim 23, comprising the concave profile being variable from a first position that spans the transverse direction of the belt to an intermediate position that spans only a minor portion of the transverse direction of the belt, in which the minor portion can be disposed to a side of the belt.

51. (New) The method of claim 23, comprising providing a plurality of adjustable idler rollers located below an upper run of the belt, each in a fully lowered orientation in which the belt is in the first position.

52. (New) The method of claim 23, comprising providing a plurality of adjustable idler rollers located below an upper run of the belt, each in a fully raised orientation in which the belt is in the second position.

53. (New) The method of claim 23, comprising providing a plurality of adjustable idler rollers located below an upper run of the belt, wherein the belt is in an intermediate position with both raised and lowered idler rollers.

54. (New) The apparatus of claim 35, wherein the concave profile is variable from a first position that spans the transverse direction of the belt to an intermediate position that spans only a minor portion of the transverse direction of the belt, in which the minor portion can be disposed to a side of the belt.

55. (New) The apparatus of claim 35, comprising a plurality of adjustable idler rollers located below an upper run of the belt.

56. (New) The apparatus of claim 55, wherein when each of the plurality of adjustable idler rollers is in a fully lowered orientation, the belt is in the first position.

57. (New) The apparatus of claim 55, wherein when each of the plurality of adjustable idler rollers is in a fully raised orientation, the belt is in the second position.

58. (New) The apparatus of claim 55, wherein when the apparatus comprises both raised and lowered idler rollers, the belt is in an intermediate position.